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## (54) NONAQUEOUS ELECTROLYTE AND LITHIUM SECONDARY BATTERY USING THE SAME

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a lithium secondary battery having superior battery characteristic, such as cycle characteristic, electrical capacity and storing characteristic and having superior low-temperature characteristic.

**SOLUTION:** In a lithium secondary battery formed of a positive electrode, a negative electrode and a nonaqueous electrolyte formed by dissolving the electrolyte in a nonaqueous solvent, the positive electrode is made of a material containing lithium compound oxide, and the negative electrode is made of a material containing graphite, and the nonaqueous solvent is mainly composed of annular carbonate and chained carbonate, and the nonaqueous solvent includes 0.1-4 wt.% of 1,3-propansultone and/or 1,4-buthanesultone.

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